

Comparisons of Job Characteristics

Focus Occupation: Biomedical Engineers (17-2031)

Associated Occupation: Engineering Technicians, Except Drafters, All Other (17-3029)

[Compare Knowledge](#)

[Compare Skills](#)

[Compare Abilities](#)

[Compare Detailed Work Activities](#)

[Compare Tools and Technologies](#)

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

Knowledge

Similarity of Focus Occupation to Associated Occupation: 61

Focus Occupation: Biomedical Engineers (17-2031)

Associated Occupation: Engineering Technicians, Except Drafters, All Other (17-3029)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation
Engineering and Technology	5.7	17.6	21.0	>> Current knowledge level is likely more than sufficient
Mathematics	9.2	16.6	20.2	>> Current knowledge level is likely more than sufficient
Mechanical	6.8	16.6	10.2	<< Extensive education and/or training may be required
Computers and Electronics	8.4	16.2	16.5	0 Current knowledge level may be sufficient
Design	5.2	15.1	16.6	0 Current knowledge level may be sufficient
Production and Processing	6.0	13.3	9.2	<< Extensive education and/or training may be required
Physics	4.3	12.9	17.6	>> Current knowledge level is likely more than sufficient
Telecommunications	3.9	7.4	5.0	<< Extensive education and/or training may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills

Similarity of Focus Occupation to Associated Occupation: 40

Focus Occupation: Biomedical Engineers (17-2031)

Associated Occupation: Engineering Technicians, Except Drafters, All Other (17-3029)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation
Operation Monitoring	6.6	12.1	9.7	< A higher skill level may be required
Quality Control Analysis	5.9	11.5	10.4	< A higher skill level may be required
Mathematics	6.2	10.8	14.2	>> Skill level is likely more than sufficient
Troubleshooting	4.5	10.6	9.4	< A higher skill level may be required

Equipment Maintenance	3.5	10.4	6.7	<<	Extensive development of skills in this area may be required
Equipment Selection	3.3	9.4	7.0	<<	Extensive development of skills in this area may be required
Repairing	3.4	9.4	7.0	<<	Extensive development of skills in this area may be required
Technology Design	2.6	7.0	11.7	>>	Skill level is likely more than sufficient
Installation	1.7	6.2	7.5	>	Skill level is likely sufficient
Programming	2.2	4.9	10.1	>>	Skill level is likely more than sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Abilities		Similarity of Focus Occupation to Associated Occupation: 92			
Focus Occupation: Biomedical Engineers (17-2031)					
Associated Occupation: Engineering Technicians, Except Drafters, All Other (17-3029)					
Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Visualization	7.5	12.3	12.4	0	Current ability level may be sufficient
Information Ordering	9.9	12.0	13.6	>	Current ability level is likely sufficient
Mathematical Reasoning	6.3	11.2	13.6	>	Current ability level is likely sufficient
Flexibility of Closure	7.8	10.5	11.1	0	Current ability level may be sufficient
Perceptual Speed	7.4	10.3	8.7	<	Some improvement in abilities may be required
Number Facility	6.3	10.2	11.2	0	Current ability level may be sufficient
Visual Color Discrimination	6.4	9.6	7.2	<<	Extensive improvement in abilities may be required
Memorization	5.6	7.5	6.9	0	Current ability level may be sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

There are no common work activities.

Tools and Technologies that Both Occupations Have in Common		Similarity of Focus Occupation to Associated Occupation: 72
Focus Occupation: Biomedical Engineers (17-2031) Associated Occupation: Engineering Technicians, Except Drafters, All Other (17-3029)		
Tools and Technologies	Exclusivity	
Actuators	70	
Autoclave and sterilizer equipment and accessories	12	
Business function specific software	1	
Chemical evaluation instruments and supplies	10	
Circuit assemblies and radio frequency RF components	40	
Computer data input devices	2	

Computer printers	2
Computers	1
Content authoring and editing software	1
Data management and query software	1
Development software	4
Electrical measuring and testing equipment	7
Electrochemical measuring instruments and accessories	9
Fluid mechanics equipment	11
Holding and clamping tools	3
Indicating and recording instruments	2
Industry specific software	1
Integrated circuits	18
Laboratory centrifuges and accessories	13
Laboratory electron and solid state physics equipment	29
Laboratory enclosures and accessories	17
Laboratory incubating equipment	20
Laboratory washing and cleaning equipment	35
Length and thickness and distance measuring instruments	2
Machine tools	7
Machinery for working wood and stone and ceramic and the like	12
Mechanical instruments	14
Metals and metallurgy and structural materials testing instruments	15
Pressure measuring and control instruments	10
Rubber and plastic processing machinery and equipment and supplies	35
Sound generating and measuring equipment	19
Spectroscopic equipment	10
Transducers	23
Viewing and observing instruments and accessories	4

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.